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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,050	09/24/2003	Kazuhito Kato	NS-US035100	1493
22919	7590	10/13/2005	EXAMINER	
SHINJYU GLOBAL IP COUNSELORS, LLP 1233 20TH STREET, NW, SUITE 700 WASHINGTON, DC 20036-2680			WOODS, ERIC V	
			ART UNIT	PAPER NUMBER
			2672	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/669,050

Applicant(s)

KATO ET AL.

Examiner

Eric V. Woods

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9, 10, 13-16 and 19 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 11, 12, 17 and 20 is/are rejected.
- 7) ☒ Claim(s) 7-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 August 2005 has been entered.

### ***Response to Arguments***

Applicant's arguments, see Remarks pages 1-16, filed 2 August 2005, with respect to the rejections of claims 7 and 8 under 35 U.S.C. 112, second paragraph, and claims 1-3, 5-6, 11-12, 17, and 20 have been fully considered and are persuasive.

The rejections of claims 7-8 under 35 U.S.C. 112, second paragraph, as indefinite are withdrawn because applicant's amendments have provided sufficient detail and definition of what the terms they replaced meant.

The rejections of claims 2-4 as unpatentable under 35 U.S.C. 103(a) are withdrawn because the claims have been canceled.

The rejections of claims 1, 5-6, 11-12, 17, and 20 as unpatentable under 35 U.S.C. 103(a) as unpatentable are withdrawn in view of applicant's amendments and the Arguments presented on pages 1-13.

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Examiner does not entirely concede the point that the Abali reference does not teach all of the limitations of claims 11-12, **but** as agreed in the interview, to expedite prosecution a new reference is introduced below to deal with this limitation.

However, upon further consideration, new ground(s) of rejection follow(s) below. Certain claims have been found allowable as noted in previous Office Actions and certain of the amended claims have been found allowable as noted in the "Allowable Subject Matter" section.

***Priority***

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Specifically, applicant has multiple foreign applications from which applicant is claiming priority. In order to receive the benefit of foreign priority filing, applicant is required to: (a) submit translated copies of the foreign patent documents as in MPEP 201.15; and (b) indicate which claims receive which foreign priority date. The reference applied below clearly falls between the dates of the two foreign priority documents. Further, applicant is reminded that if **portions** of each claim come from each document, it is well-established patent law that a claim receives the priority date of the newest subject matter therein (that is, if the additions and deletions of material to a claim cause it have some portion of the newer foreign priority document, the claim is prima face only accorded the priority date of the newer foreign document.

Therefore, applicant must perfect the foreign priority claim as discussed above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5-6, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abali in view of Levesque (US PGPub 2004/0110565 A1) ('Levesque') and Foxlin (US PGPub 2003/0023192 A1). Method uses same elements as apparatus; they are properly subject to the same grounds of rejection.

As to claims 1 and 20,

A road vehicle display device comprising: (Preamble only recites summary of claim and is not given patentable weight per *Kropa v. Robie* and *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999))

-A display section configured and arranged to be fixedly coupled to a road vehicle to display an image within a display region of a non-head mounted display screen to a viewer inside the road vehicle; (Abali Figs. 1 (element 10), 6A; col. 2:1-15; clearly the system of Abali may be mounted in a road vehicle – for example, Figure 6A shows an apparatus that may be fixedly mounted in a vehicle, for example 1:19-25, 6:59-64, where the use of the system in an automobile is suggested, and in 7:52-56 the use of such a system in aircraft avionics displays and naval vessels, e.g. navigation displays, are taught; therefore, car navigation systems are well known in the art, and as noted above, particularly in 6:59-64, Abali fairly suggests the use of such a system in an automobile, since Abali discusses the requirements that such a system would have)

-A motion detecting section configured and arranged to compute a movement of the display section by determining movement of the road vehicle in which the road vehicle display device is used; (Abali 2:1-55, particularly 2:25-30 and 2:40-50 for determining movement of the vehicle and the display device, with 1:19-25 and 6:59-64 teaching the

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use of such a system in a road vehicle, since Abali clearly at least considers the requirements of using such a system in an automobile)

-An image displacement computing section configured to compute a translational displacement of the display section based on the movement of the display section; (Abali 2:50-55, discussed more specifically in 6:5-60)

-A viewer motion determining section configured and arranged to determine a viewer motion value that is indicative of a movement of a head portion of a viewer watching the display section; (Levesque [0026] teaches a system which has sensors for tracking the location and position of a user's head, where a system exists that has a heads-up display, which is well known in the art to allow the user to see an image through a automobile windshield or the like so that the view is not obstructed (or some other kind of display))(see for example [0024]), where multiple users can use the same or multiple HUD devices [0024]. Finally, Levesque teaches that any movement of the user's head as detected by the sensors may be taken into account to adjust the image [0034].)(As one example of such a head-tracking device, Foxlin (US PGPub 2003/0023192 A1) teaches the use of an improved head-tracking device [0131] that can be used with a heads-up type display, with the sensor shown in Figure 2B [0050] as mounted on the user's head)

-A relative displacement computing section configured to compute a relative displacement between the display section and the head portion of the viewer based on the translational displacement of the display section computed by the image

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displacement computing section and the viewer motion value of the head portion of the viewer determined by the viewer motion determining section; and

(Abali 2:1-55, particularly 2:50-55 and implemented in 6:5-60, particularly Fig. 2 where such a translation is shown)(See above discussion of Levesque for how the system compensates for such motion; one example sensor, Foxlin, as noted above, clearly discusses how such positional data is output).

-A display control section configured to shift a display position of the image within the display region of the display screen by an amount based on the relative displacement to stabilize the image within the display section to the viewer. (Abali 2:1-55, particularly 2:50-55 and implemented in 6:5-60, particularly Fig. 2 where such a translation is shown)(Levesque [0024, 0026, 0034] all clearly teach that the user's head position is tracked, and that the display is appropriately compensated as above)

Reference Abali clearly teaches most of the limitations of the above claim with the exception of the relative motion compensation system of Levesque and Small. Clearly, as stated in the last office action, Abali teaches those components very clearly in a manner that is clear enough to sustain under 35 U.S.C. 102(b). Levesque clearly teaches a system that would operate on a motor vehicle, e.g. an automobile, undergoing acceleration, and Foxlin suggests compensating the display so that the changes in orientation by the user would be reflected in the display (see for example claim 44). Clearly, if the system of Levesque were used in a platform undergoing motion, it would suffer from the same problems that are well known in the art, e.g. inducing motion sickness in users (Abali 1:10-30, 2:1-20). Motivation for combination



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comes from the fact that Abali clearly teaches that it is necessary to provide motion compensation to prevent the user from feeling disturbed by the motion, and so the motivation would be inherent in the second reference. The combination would indeed be operative, and the combination is not improper hindsight. Motivation for combination with Foxlin is simply that Foxlin is an improved head-tracking system that could be used with Levesque (Foxlin improvements are listed in [0012-0022]).

As to claim 5, Levesque and Foxlin clearly teach tracking the motion of the head of the user / viewer as noted above. Motivation and combination are incorporated by reference from the parent rejection.

As to claim 6, Foxlin clearly teaches that the sensor takes advantage of certain models of how human beings respond to motion, particularly still periods (Abstract, [0017], [0021], [0071-0077], and the like). Motivation and combination are incorporated by reference from the parent rejection.

As to claim 17,

The display device as recited in claim 1, wherein

-The display section, the motion detecting section, the image displacement computing section and display control section are configured and arranged to be part of a portable, hand held device.

Reference Abali clearly teaches this limitation, as in claims 1:15-30 various portable devices (laptop computers, personal digital assistants (PDA), et cetera) are taught and the invention is clearly directed at means of correcting vibrations for screens in vehicles, etc., and clearly it is reasonable that such devices be portable, as this is

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how Abali opens his disclosure – that this a problem that he aims to correct. Clearly, it would be obvious to have all the components in one portable, hand-held device, as the invention of Abali is very small (comparatively, if MEMS accelerometers and some kind of ASIC or IC is used, such a device could be easily fit on a piece of silicon 4mm<sup>2</sup> or smaller, as a typical MEMS accelerometer is approximately these dimensions and digital circuitry of the type required here requires negligible die space (a few amplifiers, registers, et cetera) at current process geometries or even at 0.5μ m, as it is primarily utilizing the existing display circuitry (note 6:25-40), which would clearly fit inside a handheld device).

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abali in view of Idesawa et al (US PGPub 2004/0239587 A1).

As to claim 11,

A road vehicle display device comprising: (Preamble only recites summary of claim and is not given patentable weight per *Kropa v. Robie* and *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999))

-A display section configured and arranged to be fixedly coupled to a road vehicle to display an image within a display region of a non-head mounted display screen to a viewer inside the road vehicle; (Abali Figs. 1 (element 10), 6A; col. 2:1-15; clearly the system of Abali may be mounted in a road vehicle – for example, Figure 6A shows an apparatus that may be fixedly mounted in a vehicle, for example 1:19-25, 6:59-64, where the use of the system in an automobile is suggested, and in 7:52-56 the use of

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such a system in aircraft avionics displays and naval vessels, e.g. navigation displays, are taught; therefore, car navigation systems are well known in the art, and as noted above, particularly in 6:59-64, Abali fairly suggests the use of such a system in an automobile, since Abali discusses the requirements that such a system would have)

-A motion detecting section configured and arranged to compute a movement of the display section by determining movement of the road vehicle in which the road vehicle display device is used; (Abali 2:1-55, particularly 2:25-30 and 2:40-50 for determining movement of the vehicle and the display device, with 1:19-25 and 6:59-64 teaching the use of such a system in a road vehicle, since Abali clearly at least considers the requirements of using such a system in an automobile)

-An image displacement computing section configured to compute a translational displacement of the display section based on the movement of the display section; (Abali 2:50-55, discussed more specifically in 6:5-60)

-An acceleration/deceleration operation determining section configured and arranged to determine whether the vehicle is accelerating or decelerating; (Abali clearly includes accelerometers, as noted above, which clearly determine periods of acceleration.)(Idesawa teaches the use of an acceleration sensor, where it can detect periods of acceleration and can detect when movement stops such that it can compensate for hand-shake and jitter, as well as periods of intended movement. [0025-0026].)

-A center deviation computing section configured and arranged to compute a center deviation between a center of the image and a center of the display region of the display

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section, the center deviation computing section being further configured and arranged to stop computing the center deviation upon determining that the vehicle is accelerating or decelerating; and (Fig. 3 clearly illustrates the shifting operation, and 4:20-40 discussed the procedure in detail, as well as 7:15-40, and for the Fig. 3 procedure to performed (e.g. re-centering), the center of both the display and of the translated image must *prima facie* be known, and if both are known, it is clear that the center deviation is also known)(A circuit capable of biasing against constant acceleration must *prima facie* have a means for determining when such constant acceleration begins and ends; otherwise, such a circuit would be nonfunctional, stuck in a permanent "on" position, and/or would not be effective for the purpose it was designed for. After all, the purpose of the anti-bias circuit is to compensate for long duration constant acceleration periods. It is inherent for the circuit to function correctly that it would be able to turn on and off when it detected non-constant acceleration or deceleration.)(See also the Response to Arguments section in the previous Office Action for an explanation of this particular limitation and how Abali teaches it)

-A display control section configured to adjust a display position of the image within the display region of the display section based on the translational displacement of the display section and the center deviations with the display control section being configured to stop using a center deviation that is computed during periods of acceleration and deceleration of the road vehicle. (Abali 2:1-55, particularly 2:50-55 and implemented in 6:5-60, particularly Fig. 2 where such a translation is shown) (Again, Fig. 3 clearly illustrates that the display device performs the recited function, and

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4:20-40 teaches that such image is indeed displayed such that the center deviation is canceled.) (Idesawa teaches the use of an acceleration sensor, where it can detect periods of acceleration and can detect when movement stops such that it can compensate for hand-shake and jitter, as well as periods of intended movement. [0025-0026].)

Abali fairly teaches or suggests all the limitations of the above claim. However, examiner admits that an argument of inherency must be made (as noted above about how a bias circuit works, and why it must have an 'off' setting). While not conceding the propriety of applicant's arguments on this point, to expedite prosecution reference Idesawa is introduced. Idesawa fairly teaches the use of an acceleration-detection section that can detect movement starts and stops, which would be suitable for use in an environment with constant starts and stops (e.g. applicant's characterization of automobile motion (see pages 10-12 of Remarks (the section entitled 'Rejection based on Abali et al. patent))), since it is being used with a mobile device (Figure 1) as illustrated in for example Figure 2 [0039, 0058, 0063, 0065, etc]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Abali with the stop-period detecting means and systems of Idesawa for at least the following reasons: (a) the system of Idesawa allows for the viewing of a larger image using scrolling functionality if the display is too small [0057-0065]; (b) the system of Idesawa more naturally mimics the functioning of the human brain and is therefore more accurate [0068-0072]; (c) the above recited inherency arguments concerning the anti-bias circuits. Notwithstanding applicant's arguments to the contrary, it would be

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obvious to one of ordinary skill in the art that some means was necessary to deactivate the circuit when long periods of acceleration or deceleration were **not** occurring. The means would therefore be the system of Idesawa.

As to claim 12,

The display device as recited in claim 11, wherein,

-The acceleration/deceleration operation determining section is further configured and arranged to determine whether the vehicle is accelerating or decelerating by detecting at least one of an accelerator pedal operation, a steering operation, and a vehicle motion.

This limitation is clearly taught by Abali. See the rejection to claim 11, where it is clearly established that the basis for determining the acceleration or deceleration was vehicular motion, which meets the above-recited limitation.

***Allowable Subject Matter***

Claims 9-10, 13-16, and 19 are allowed as noted in the previous Office Action for the reasons contained therein.

Claim 18 is allowed for the reasons noted in the Previous Office Action, since the claim was objected to as being dependent upon a rejected independent claim, but the claim was made independent with all the intervening limitations, and is therefore allowed.

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Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US PGPub 2004/0109093 to Small-Stryker, which clearly teaches a display that has multiple polarized images on it with varying polarizations in alternate pixels such that various users can see different images on it with glasses having different polarizations without special-purpose headgear.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V. Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-4:30 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

*Jeffrey A. Brice*  
JEFFREY A. BRICE  
PRIMARY EXAMINER

October 3, 2005